gations are needed to confirm the interest of this kind of muscle strengthening in the upper limb motor recovery following stroke.

Further reading

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CO22-004–EN

Vertical perception after stroke: Anatomy and clinical correlates for visual vertical

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Keywords: Visual vertical; Stroke; Insula

Introduction.– The insula seems to be a crucial zone in the perception of the visual vertical (VV). This has been suggested by a qualitative analysis of the cerebral lesions [1], and has never been statistically confirmed [2]. The aim of this study was to precisely analyse, with modern cerebral imaging, the cerebral area supporting VV perception.

Methods.– VV was assessed in 23 subjects with unique hemisphere stroke (52.9 ± 1 years, 3.7 ± 2 months after stroke) and 27 control subjects (54 ± 9 years). Lesion location and extension were analysed using MRI ($n = 16$) or CT scans ($n = 7$). The lesions were reconstructed onto standardized brain templates. All lesions were mapped using the free MRIcro software distribution.

Results.– As expected, a spontaneous contralesional VV tilt (-4.7 ± 4.7; $P < 0.001$) was found in hemiplegics. VV did not differ between right and left stroke. A correlation was found between lesion extension and the magnitude of VV tilt ($r = 0.54$; $P < 0.01$): the longer the extension the more biased the visual vertical towards the contralesional side. The analysis of the cerebral lesions of patients with ($n = 14$) minus patients without visual vertical bias ($n = 9$) showed that the most frequently and specifically damaged cerebral region in patients with biased visual vertical was centered on the insula ($P < 0.01$).

Discussion–conclusion– The essential role of insula in perception of VV is confirmed. Nevertheless, the absence of right hemispheric dominance, and the influence of lesion extension on VV suggest that verticality representation depends more on the competencies of neural circuits than the properties of a given brain structure, and that VV would partially test verticality representation, more specifically than deal with vestibular graviception [3].

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Evaluating walking dynamic stability: A spatiotemporal parameters based score

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Keywords: Score; Walking; Dynamic stability; Spatiotemporal parameters

Spatiotemporal parameters (STP), simple to obtain nowadays, are the quantifiable parameters the most used to evaluate walking in a global way and to assess fall risk. Two characteristics of balance—inspired by terminology used in posturology for study of static balance [1]—must be taken into account during walking: steadiness and stability. Steadiness will be all the STP modifications which tend to minimize imbalance and to facilitate the control. Stability is the faculty to reply efficiently to internal or external disturbances when walking. While a conglomerate score, the Functional Ambulation Performance Score [2,3], allows a quick view of the steadiness feature, there is nothing concerning the dynamic stability. We propose a new score.

Methods.– A GAITRite walkway was used to log STP in 219 subjects. We kept nine STP to develop a new score from principal component analysis. Based on quantification of step-to-step and stride-to-stride variations of selected STP, this score assesses the walking dynamic stability.

Results.– While healthy subjects ($n = 123$, 35 ± 13 years, 22–62) had an average score of 100 (± 7), the score decreased when the variability increased. Results for patients with Friedreich's Ataxia ($n = 95$, 18 ± 4 years, 12–26), walking without aids or with walker, were also presented (67 ± 9). Reliability analysis is currently in progress but already seems good in healthy and disabled subjects.

Discussion.– Our new score characterizes walking dynamic stability from STP variability. Used with FAPS, it will allow dynamic balance to be assessed in a complete way when the patient walks.

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Evolution of locomotive performance in HIV-infected patients in the ANRS CO3 Aquitaine Cohort

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Keywords: HIV; Locomotor function; Muscle strength; Dynapenia

In a previous cross-sectional study [1], prevalence of the poor locomotive performances (performance in more than a clinical test lower than the standards established in the literature) was considered at 29% (CI 95%: 24; 34) in 324 patients HIV of the ANRS CO3 Aquitaine cohort. The five-times sit-to-stand test was most frequently altered.

Objective.– To study the evolution of the locomotive performance 2 years later of the patients initially included in the cross-sectional phase of the CogLocHIV study.

Method.– A longitudinal and prospective study reproducing the same battery of standardized and validated tests, investigating various domains of the locomotive function (timed up and go, 5 sit to stand test [5STS], one-leg-standing with eyes closed, six-minute-walk, Berg scale). A measure of the isometric strength and a collection of the physical activity were also performed.

Results.– The analysis concerned the first 97 patients included in the longitudinal phase. The average performances of 5 STS (10.7 vs 9.9 initially, $P = 0.005$) and of the test of 6-minute-walk (511 m vs 572 m initially, $P < 0.001$) degraded in a significant way. The patients having degraded their time of 5STS of more than 2 second had weaker isometric strength of prehension than the others (36 ± 9 kg vs 43 ± 8 kg, $P = 0.01$). No degradation was noticed on the other hand concerning the other clinical tests.

Conclusion.– In 2 years of follow-up, the performances in two clinical tests appealing in particular to muscular power and stamina deteriorated. The possibility of a sarcopenia or dynapenia process arising in a more premature way in this population is evoked.

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Ateliers

Version française

Lokomat

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Blocs moteurs

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Marche en suspension

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Analyse quantifiée de la marche

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Toxine botulique et échographie

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Apport de l'accélérométrie dans l'analyse de la marche dans les pathologies neuromusculaires

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Cas cliniques en spasticité

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Lokomat

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Motor blocks

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Partial weight-bearing walk

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Gait analysis

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Echography and botulinum toxin

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Use of an accelerometer for gait analysis in neuromuscular diseases

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Spasticity: Clinical cases

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Posters

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P016–FR

Syndrome myopathique axial

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Mots clés : Muscles spinaux ; Faiblesse ; Myopathie
Introduction.– Muscles spinaux assurent : un redressement de la colonne vertébrale, la fixation de ses segments, fixation de la tête, inclinaison, rotation et mouvements complexes. La faiblesse et/ou atrophie de ces muscles définit le syndrome de myopathie axiale.
Observation.– Madame M., 72 ans, antécédents d'insuffisance thyroïdienne substituée. Douleurs chroniques de l'épaule droite, paresthésies irradiant à l'omoplate, Depuis un an tendance à l'anté-flexion du tronc + inflexion latérale gauche en position debout et à la marche.Examen clinique : rachis cervical : OM : 7 cm, C7-F : 13 cm, effacement total de la lordose lombaire, rachis lombaire souple, inflexion latérale gauche de 5 cm, examen neurologique normal. RX rachis : normale, biologie : LDH : 475UI/l, CPK : 340UI/l. Conclusion : myopathie axiale d'origine indéterminée. CAT : orthèse de tronc anti-cyphose, renforcement des spinaux en endurance et apprentissage d'autoprogramme.
Discussion.– Plusieurs étiologies peuvent être incriminées dans le syndrome myopathique axial. Le tableau clinique est caractérisé par une installation progressive, une prédominance féminine, une réductibilité au décubitus et surtout l'élimination des autres étiologies.Évolution : bénigne par rapport aux autres pathologies neuromusculaires.Les objectifs de la prise en charge sont de réduire la déformation et d'éviter l'aggravation, la prise en charge de la maladie initiale et la rééducation : travail en de lordose pour verrouiller le bassin, renforcement des spinaux et un appareillage anti-cyphose : lombostat ou corset en coutil baleiné.
Conclusion.– Plusieurs symptômes musculaires peuvent refléter une myopathie axiale sans préjuger de la cause. C'est un diagnostic d'élimination d'où